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May 31, 2000

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Re: New U.S. Patent Application
Inventor: Avner Shafrir *et al.*
Entitled: "COMMUNICATION LINK SYSTEM BASED ON USER
INDICATOR"

JC625 U.S. PTO
09/583736
05/31/00

Dear Sir:

Attached is a new patent application for filing in the United States Patent and Trademark Office including nineteen (19) pages of specification, four (4) pages of claims (numbered 1-29), an Abstract, ten (10) sheets of drawings (labeled Figs. 1A-9), an unexecuted Joint Declaration for Patent Application. This application claims priority from U.S. Provisional Patent Application Serial No. 60/137,513, filed June 2, 1999.

The filing fee is calculated as follows:

Basic Filing Fee	\$690.00
Total Claims: 25 (excess of 9)	\$162.00
Independent Claims: 4 (excess of 1)	<u>\$ 78.00</u>
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Our check in the amount of \$930.00 is attached to cover the basic application filing fee and additional claims fee. In the event of any variance between the amount enclosed and the Patent and Trademark Office charges, please charge or credit any difference to the undersigned's Deposit Account No. 50-0206.

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May 31, 2000

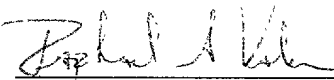
Page 2

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Enclosures

COMMUNICATION LINK SYSTEM BASED ON USER INDICATOR

5

Field of the Invention

The invention relates to a system and method for presenting a user status indicator for network users on the system and establish communications with network users through the user status indicator.

10 **Background of the Invention**

Systems for determining whether a network user is on-line are known. Such systems typically enable users to view criteria relating to one or more user's on-line status. This criteria may include, for example, the time and terminal at which a user logged-on to the network. Prior systems, however, generally require a separate computer
15 application program to obtain information regarding user status. For example, users may need to open a network application program that provides a network user's status information.

Network application programs typically require users to know a user's login identification to obtain a user's status. A user's login identification may be, for example,
20 the user's name, a number associated with the user's name, or a variation of one or both. If a user does not know a user's login identification, the user may not be able to obtain that user's status.

Additionally, provided a user is able to obtain a user status for one or more users, existing systems typically do not enable the user to perform any other operations based
25 on the user's status. A user again must use a separate computer program to perform another desired operation. This type of configuration increases the time required to obtain a user's status and does not provide a user with additional capabilities relating to the user's status.

These and other drawbacks exist.

30

5 **Summary of the Invention**

 An object of the present invention is to overcome these and other drawbacks in existing systems.

 Another object of the present invention is to provide a system and method that enable a user to establish a communication with that network user using the user
10 indicator.

 Another object of the present invention is to provide a system and method that enable network users to prioritize a list of communication options according to a desired preference.

 Another object of the present invention is to provide a system and method that
15 present a network user's communication option preferences to other network users in an order preferred by the network user.

 Another object of the present invention is to provide a system and method that enable network users to prevent other network users from establishing one or more types of communications with that network user.

20 Another object of the invention is to provide a system and method that enable a network users attempting to communicate with a network user who has prevented network users from establishing communication to notify that network user of an emergency condition.

 Another object of the present invention is to provide a system and method that
25 determines available communication modes for a network user and notifies other network users of the available communication modes for that network user.

 To accomplish these and other objects and features, a system, method, and electronic storage medium containing code embodied therein are provided according to an embodiment of the present invention. The system presents user indicators that may be
30 selected, like a link, to communicate with the user corresponding to the user indicator.

 The user indicator provides a mechanism by which a user may establish one or more communications with one or more network users. The user indicator acts as a link

5 for establishing communications with network users. A network user may select a user indicator (e.g., using a conventional computer mouse or keyboard, voice activation) and establish one or more communications with one or more network users using the user indicator. For example, after selecting a user indicator, a network user may be presented with a menu identifying one or more communication options. The communication
10 options may be presented in an order that indicates a network user's preference for receiving communications. The network user may then select one or more communication options and request that the communication option(s) selected be established.

According to another embodiment of the present invention, a network user may
15 set, for example, a "Do Not Disturb" option that prevents network users from attempting to establish one or more communications with that network user. Any network user attempting to establish a communication with a network user who has set a "Do Not Disturb" option may receive a notification indicating that the network user does not wish to be disturbed. A network user receiving such a notification may be presented with an
20 option enabling the network user to send an "Urgent Communication Request" to the network user who has set the "Do Not Disturb" option. The network user receiving the "Urgent Communication Request" may then be presented with an option enabling an "override" of the "Do Not Disturb" option permitting the communication to be established. Alternatively, the network user may deny the "Urgent Communication
25 Request" and the network user requesting the urgent communication may be so notified.

In the present invention, the concept of a user indicator should be understood to include the name of a user, the user's login identification, a user numeric identifier or other login identification. According to another embodiment of the present invention, the system presents user indicators within electronic documents along with a status indicator.
30 Status indicators may comprise a color, font, icon, word(s) or other indicator that informs document viewers of the status of the user associated with the user indicator. For example, if a user's name is Joe Smith, whenever Joe Smith's name appears in any

5 electronic document (e.g., e-mail), that name may be presented as a link (e.g., with underlining and highlighting as in a hypertext markup language (HTML) document link) if Joe is on-line and actively using the system. A viewer of the e-mail may then select the link to activate communication systems that allow the viewer to communicate with Joe Smith.

10 User status may comprise two types of status: the on-line status of the user and the availability status of the user. The on-line status may indicate whether the user is on-line for a particular communication mode. For example, in a networked environment for which users log-in before gaining access to a server system, the on-line status may represent whether the particular user is logged-in. If the communication mode is a pager,
15 cellular phone, or some other communications system, the on-line status may indicate whether the user's device is on.

The availability status may represent whether the user is available for communication through the communication mode. For the networked environment example, the availability status may indicate whether the logged-in user is actively using
20 the network, in a do-not-disturb mode, or not actively using the network. Other choices may also be provided. For other communications modes, for example, the availability status may indicate whether the user is actively using the communications device.

Different visual indicators may be provided for the on-line and availability status indicators. For example, in one embodiment, the system presents the user indicator for a
25 network user as an active link if the user is on-line and provides a colored "active" icon if the user is also available and active on the system. The link may then be activated to present one or more communications options for the viewer to communicate with the on-line user. The communications options may be presented according to user-defined preferences through visually indicating the user's preferences. The different visual
30 indicators may be provided with the user indicator, each visual indicator associated with a different user communication device.

5 The system comprises an identification module for identifying the one or more network users through the user indicator. The user indicator may comprise the user's name, employee number, log-in identification or other such indicator. The identification module may also cooperate with a status module to present the status of the user corresponding to the user indicator. The status module may provide a visual indication of
10 a network user's status using, for example, color coding, formatting, symbols, etc. A communication module is provided that, upon activation, establishes one or more communications with the selected network users, such as through selection of the user indicators. Communications may include chat, telephone, mobile phone, e-mail, facsimile, application sharing, whiteboard presentations or paging that may be initiated
15 by the user selecting the user indicator like a link in a HTML document.

These and other objects, features, and advantages of the invention will be apparent to those having ordinary skill in the pertinent art from the detailed description of the preferred embodiments with reference to the figures.

Brief Description of the Drawings

20 Fig. 1 is a schematic block diagram of components of a communication system in accordance with one embodiment of the present invention.

Fig. 1A is a schematic block diagram of a networked system according to an embodiment of the present invention.

25 Fig. 2 is a schematic block diagram of a method of determining a user status and establishing a communication using the user status in accordance with one embodiment of the present invention.

Fig. 3 is a schematic block diagram of a view of an electronic mail message in accordance with one embodiment of the present invention.

30 Fig. 4 is a schematic block diagram of a view of an electronic mail message illustrating various user's status in accordance with one embodiment of the present invention.

5 Fig. 5 is a schematic block diagram of a view of an electronic mail message illustrating network user's status in accordance with one embodiment of the present invention.

Fig. 6 is a schematic block diagram of a view of an electronic mail message illustrating various communications options in accordance with one embodiment of the
10 present invention.

Fig. 7 is a schematic block diagram of a view of an electronic mail message illustrating various network user options in accordance with one embodiment of the present invention.

Fig. 8 is a schematic block diagram of a view of a HTML document having user
15 indicators presented as links in accordance with one embodiment of the invention.

Fig. 9 is a schematic block diagram of a view of a communication initiated using a user indicator in a HTML document in accordance with one embodiment of the invention.

Detailed Description of the Preferred Embodiments

20 The present invention enables users to determine, by visual inspection, whether other network users are available for communication using a user indicator. The invention enables users to determine a network user's status wherever a user indicator is presented in the system, whether it is in an e-mail, HTML document, or any other electronic document. The system presents each user indicator with a status link (*e.g.*,
25 visual indication) for one or more network users identified in an electronic document. A network user's status may include the user's on-line status and availability status for communication with one or more communications media, although other status identifiers may also be provided.

A network user's status may be displayed using a variety of coding techniques.
30 Each coding technique may signify a different status. For example, a user indicator may be displayed in a particular color (*e.g.*, green) if a network user is logged in to the network and actively using the network. Also, a symbol (*e.g.*, a red square) may be

5 displayed adjacent a user indicator to signify that the network user is logged in to the network but not actively using the network. Other coding techniques may also be used.

According to one embodiment of the present invention, the invention provides a pervasive system 10 for providing a status link to one or more communication operations using a user indicator identified in an electronic document. System 10 is pervasive by
10 enabling user indicators appearing in any electronic document to be used as a link to other operations.

According to another embodiment of the invention, a network user may establish communications with one or more network users using the user indicator. A network user may request that a communication link (*e.g.*, an audiovisual call, e-mail, chat,
15 application sharing, whiteboard presentations, etc.) be established with a network user that is logged in to and available on that type of communication by, for example, using a conventional computer mouse to “click” on the status link and be provided with one or more communication options. The network user may then select, for example, an option entitled, “Audiovisual call,” and establish an audiovisual communication link with one or
20 more network users. Alternatively, the invention may present a network user with various icons representing particular communication modes. The network user may then select a particular icon and establish a communication using the communication mode represented by the icon selected. These and other embodiments of the present invention are described in further detail below.

25 Fig. 1 illustrates a system 10 for enabling a network user to obtain one or more network users’ status and establish a communication with one or more network users. System 10 may include one or more modules including an identification determining module 12, identification presenting module 14, status determining module 16, status
presenting module 18, status linking module 20, communication options presenting
30 module 22, communication establishing module 24, and communication activation module 26. Identification determining module 12 may be used to determine a user indicator that is to be linked. A user indicator may be, for example, the network user’s

5 name, an employee identification number, a combination of the two, or various other forms. Once a user indicator is determined, identification presenting module 14 may be used to present the user indicator within an electronic document within the system, such as an electronic mail document, a HTML document, a window box, or some other viewable document presented to a user.

10 When presenting a user indicator, status determining module 16 may be used to determine a network user's status (*e.g.*, on-line and active, on-line and inactive, etc.) so that status presenting module 18 may present a visual indication of a network user's status using the user indicator. For example, status determining module 16 may determine that a network user is logged in to the network (*e.g.*, on-line) and actively using
15 the system (*e.g.*, typing, moving a computer mouse, etc.). Based on this determination, status presenting module 18 may present the user indicator using one or more formatting options. For example, a user indicator of a network user who is on-line and actively using the network may appear as green text. Also, a symbol associated with an on-line/active status may be displayed adjacent a user indicator to indicate the network user's
20 status. For example, a green square with the word "active" may be placed adjacent a user indicator of a network user that is on-line and actively using the network.

Status linking module 20 may cooperate with status presenting module 18 to provide a communication link using a user indicator. For example, a network user may select a user indicator listed in an electronic document (*e.g.*, using a conventional
25 computer mouse or keyboard). Status linking module 20 may allow two modes of selecting communication options. One mode may automatically select a default or most preferred option and another mode may be used to present a user with available communications options. For example, if a user "clicks" a left button on a conventional computer mouse, status linking module may initiate, for example, a text chat if text chat
30 is the default or first available user preferred communication. After a user indicator is selected, communication options presenting module 22 may be used to present one or more communication options to the network user. Communication options may include,

5 but are not limited to, audiovisual call, telephone calling, application sharing, whiteboard presentations, electronic mailing, faxing, paging, and chatting.

A network user may prioritize one or more communication options and the system may present the communication options to show the user's communications preferences. For example, the system may present communications options in an order reflecting a
10 network user's communication preference. For example, a network user may prefer to receive communications via electronic mail. The network user may set a communication options preference so that communication options are presented to a network user in the following order: 1) electronic mail; 2) chat; 3) audiovisual call; 4) page; 5) facsimile. Thus, a network user attempting to contact this network user may realize that the network
15 user prefers to receive communications via electronic mail.

Also, certain communications options may be presented in different colors, fonts, sizes, with visual numeric indicators, graying out, bold, or any other method of visually indicating different preferences from a group of options. It may also be desired that only available options are presented or that the first preferred method is shown if available, the
20 second preferred method is shown if the first is not available, etc.

After a communication option is selected, communication establishing module 24 may be used to establish the communication selected using the user indicator. If a network user selects, for example, an audiovisual call, communication activation module 26 may be used to activate an audiovisual call with the selected user. Communication
25 activation module 26 enables one or more network users to communicate using the selected communication option (e.g., audio, video, application sharing, chat). For example, network users that have established an audiovisual call may desire to view and modify an image and have the other network users, with whom the network user is communicating, view the changes as they are being made. The software package known
30 as Sametime™ may be used for application sharing or whiteboard presentations. Communication activation module 26 also enables network users to share one or more

5 applications without having a communication link established. Various other methods of application sharing may be performed using known application sharing programs.

Fig. 1A depicts an embodiment of a networked system according to an embodiment of the present invention. System 10 comprises a server systems 28 connected over a network 32 to one or more user systems 30. Network 32 may comprise
10 any network including local area networks, wide area networks, intranets, the Internet or other network. User systems 30 may each comprise a user status/communications module 31 and server system 28 may comprise a server status/communications (SC) module 29. These modules may each comprise the modules of Fig. 1. Also, it is possible that server and user modules 29 and 31, respectively, comprise a subset of the modules of
15 Fig. 1.

For example, server SC module 29 may comprise identification determining module 12, status determining module 26, status linking module 20, communication establishing module 24 and communication activation module 26. As such, server system 28 may receive updates from each of the user systems 30 of all users on the
20 system (*e.g.*, when a user status changes) which may therefore be reported out to each of the user systems 30. Accordingly, the status of all user systems may be known to all other user systems to enable the user SC module 31 to be able to present status information with the user indicators. User SC modules 31 may, for example, send status information (preferably in real time) for that user system whenever the status information
25 for that user system changes. The information may be compiled by server SC module 29 and sent to user SC modules 31 (*e.g.*, at login, when a user status changes). Other mechanisms for status updates of all users may also be used. For example, a system administrator or user may set a desired interval for performing status updates. Further, status of users may be periodically checked by user SC modules 29 only when that
30 information is desired for presenting with a user indicator.

As shown in Fig. 1A, server system 28 may be distributed. That is, server systems A-N may be in communication with each other. This enables server systems 28

5 to communicate status notifications between two or more server systems 28. For example, user system A may be in communication with server system A and user system B may be in communication with server system B. Because server systems A and B are in communication with each other, this enables server systems A and B to send and receive status updates to each other regarding user systems A and B.

10 Server system 28 may also be a multi-server connection. In this embodiment, user system 30 may be in communication with more than one server system 28. Each server system 28 may provide information regarding different types of status information and communication methods. For example, user system A may be in communication with server system A that provides a user's status for particular modes of communication
15 (e.g., chat, application sharing, whiteboard presentations) and server system B that provides a user's status for a different communication mode (e.g., telephone).

Fig. 2 illustrates a method 50 for obtaining a network user's status and establishing a communication with one or more network users according to one embodiment of the invention. According to method 50, a user indicator is determined
20 using step 52. A user indicator may be determined by examining a users directory that may be used to record login information regarding one or more network users. A server system may use a users directory to maintain records of all network users using the system. A users directory may be used to associate a network user with a user indicator. Therefore, system 10 may use a users directory to determine a user indicator. Other
25 methods for determining user indicators may also be used.

After determining a user indicator, step 54 presents the user indicator as a user indicator in one or more electronic documents to one or more network users. Step 56 determines a network user's status (e.g., on-line and active) and presents the status using the user indicator in step 58. Step 56 may be performed through a common server system
30 28 as described above, for example. Step 60 may be used to provide a status link from the user indicator to one or more communication options. If a user selects a status link, the selection may be received using step 62. The communication options may then be

5 presented to one or more network users in step 64. A user may select one or more communication options that are received by the system in step 66. Step 68 may then establish the communication(s) selected by the network user.

Various graphical user interface mechanisms and techniques may be used to present status information that may then be linked to communications with the user. In
10 an embodiment, the presentation of a user name within an electronic mail may also include an indication of status and upon selection of the name, the ability to communicate with an on-line user through the communication device. An example is depicted below.

Fig. 3 illustrates a view 100 of an electronic mail message in accordance with an embodiment of the present invention. View 100 may comprise an action bar 102
15 (including action buttons 102a-102n), "From" field 104, "To" field 106, "cc:" field 108, "bcc:" field 110, "Subject" field 112, and message body 114. In any field in the message, names of recipients and originators are depicted. For any such user on the system, the system may present status information associated therewith. For example, in from field 104, John Smith is shown in bold green to indicate that he is on-line and also, the "active"
20 word and icon is depicted next to his name to indicate that he is "active."

The other users in the electronic mail are not bolded, thus indicating that they are not presently on line. Also, it may be desirable to only represent the status of the "from" originator. In any event, by selecting the name, the communications module may activate a communication interface to enable the view of this message to communicate with John
25 Smith over one or more communications media.

In another embodiment, it may be desirable to provide a selectable button to present the status information for users in an electronic document, such as an electronic mail message. Accordingly, the graphical user interface may present a plurality of action buttons 102a-102n (n representing any number of action buttons being available). These
30 buttons may comprise selectable initiators to activate an executable action in the system and may include visual and/or textual representations of the actions associated therewith. For example, action buttons 102a-102f represent actions that may be performed regarding

5 a message (*i.e.*, create a new memo, reply, forward, delete, move, copy). Action button 102g may be a “Tools” icon that enables users to perform other types of actions regarding a message (*e.g.*, scan a message for viruses). Action button 102h may be a “Who Is Online” button that enables users to be presented with, for example, an additional window listing the status and availability of all network users identified in the message.

10 The network users may be identified, for example, in the “From,” “To,” “cc:,” “bcc:,” and “Subject” fields 104-112, respectively, or in message body 114.

“Who Is Online” button 102h provides a network user with a visual indication of which network users identified in view 100 are on-line and whether the network user is actively using the network. For example, after a network user selects “Who Is Online”

15 button 102h, the network user may be presented with a separate “window”(shown in Fig. 4) listing the user indicators of the network users identified in the electronic document that are on-line and indicating whether the on-line network users are actively using the network. Identifying whether network users are on-line and actively using the network may be performed in a variety of ways. For example, the listing may include only those

20 network users that are on-line. If one or more network users are on-line, their status may be indicated using a variety of techniques. For example, user indicators may appear in green text to indicate that the network user is actively using the network, red text to indicate that the network user is not actively using the network or other formatting manners (*e.g.*, bold, underline, italics, highlighting).

25 According to another embodiment of the present invention, after a network user selects “Who Is Online” button 102h, the user indicators appearing in view 100 may be coded according to a particular criteria that signifies a user’s status. For example, a user indicator of a network user that is actively using the network may be presented as green text directly in the field where the user indicator is presented (*e.g.*, fields 104-112,

30 message body 114). If a network user is not on-line, that user indicator may remain unchanged or be “grayed out,” indicating that the network user is not on-line.

5 Upon activation of “Who Is On-Line” button 102h, a status window may be displayed. Fig. 4 illustrates a status window 120 according to an embodiment of the present invention. Status window 120 may comprise a title field 122, pull-down menus 124 (including pull-down menu options 124a and 124b), and identification field 126. Title field 122 may be used to identify the electronic document from which the user
10 indicator(s) are based. Pull-down menus 124 may be used to enable a network user to perform various other operations regarding one or more network users (described in greater detail below). Identification field 126 may be used to list the user indicator(s) of the network user(s) that are on-line (and possibly not on-line) and indicate whether the on-line network users are actively using the network. Identifying whether one or more
15 network users are actively using the network may performed in a manner similar to the coding used for user indicators in fields 104-112 and message body 114 of view 100 shown in Fig. 3.

Figure 5 illustrates an “Online Meeting” pull-down menu option 124a in accordance with one embodiment of the invention. “On-line Meeting” option 124a may
20 include various options including “Message” option 128a, “Show All People” option 128b, and “Close” option 128c. “Message” option 128a may enable a network user to compose a message (*e.g.*, a “chat” message) to one or more network users listed in status window 120. “Show All People” option 128b may enable a network user to request that a listing of all network users that are logged-in to the network be listed in status window
25 120. “Show All People” option 128b may also provide a network user with the status of each person that is logged-in to the network (*e.g.*, active, inactive). “Close” option 128c may be provided as a standard Windows™ option.

If a network user selects “Message” option 128a, system 10 may provide a separate message window 150 for communicating with one or more users via a text chat.
30 Message window 150 may include a header 152, pull-down menus 154 (including “Message” option 154a and “Edit” option 154b, text body 156a, text body 156b, and various other known Windows™ options. Header 152 may be used to identify the

5 network user(s) with whom a network user has established a text chat. Pull-down menu options 154a, 154b, may be used to perform various operations relating to the text chat. For example, "Message" option 154a may be used to establish a text chat communication with one or more network users and "Edit" option 154b may be used to, for example, "cut and paste" or delete text. Text body 156a enables network users to view text that is being
10 received from the network users with whom that network user has established a text chat and text body 156b enables the network user to view the text that that network user has input.

According to another embodiment, a network user may establish an audiovisual call, conference or other communication with one or more network users. A
15 communication options window 200 in accordance with a preferred embodiment of the invention is shown in Fig. 6. Communications options window 200 comprises a text chat, audiovisual call, conference materials, and conference preferences options 202-208, respectively. As described above, text chat option 202 enables network users to establish a text chat communication with one or more network users. Audiovisual call option 204
20 enables network users to establish an audiovisual call with one or more network users. For example, a network user that selects audiovisual call option 204 may be presented with a window that displays a view of the network user(s) with whom that network user has established an audiovisual call. The view may be provided with various options relating to the communication. For example, the view may enable a network user to alter
25 the volume, vary the characteristics of the display (*e.g.*, brightness), etc.

Conference materials option 206 enables network users to conference multiple network users in one communication and perform various other operations (*e.g.*, share one or more computer applications). For example, a network user may initiate a text chat with several network users to discuss changes to a document. It may benefit the network
30 users to each be able to view the changes that are being suggested for the document. Therefore, system 10 enables users to share a word processing (or other) application so

5 that each user may view the document using the same application and make changes that are reflected in each view of the document that is presented to the network users.

Conference preferences option 208 enables network users to set one or more preferences related to conferencing. For example, a network user may prefer not to be notified of incoming communications while participating in a conference communication.

10 Therefore, system 10 enables network users to select a preference that suspends notification of incoming communications (*e.g.*, electronic mail messages, text chats). Additionally, system 10 may enable a network user to set an “unavailable” option that notifies network users attempting to establish a communication with that network user that the network user is unavailable. For example, if a network user attempts to establish

15 a communication with a network user who has set an “unavailable” option, that network user may receive a message stating “Do not disturb.” Alternatively, if a user is unavailable, a code may be assigned that provides a visual indication that the network user is unavailable. For example, the user indicator of a network user that is unavailable may appear as gray text. These and other preferences may also be presented and used in

20 conjunction with other aspects of the invention. Various other conferencing options may be provided using known conferencing applications.

According to another embodiment of the invention, one or more communication option icons 116a-116n may be provided adjacent a user indicator as shown in Fig. 7. Communication option icons 116a-116n may be used to establish a communication with

25 one or more network users. For example, communication option icons may comprise audiovisual call icon 116a, chat icon 116b, electronic mail message icon 116c, facsimile icon 116d, pager icon 116e, mobile phone icon 116f, and telephone icon 116g. A network user that desires to establish a communication with one or more network users may select a communication option icon 116a-116n and initiate a communication with

30 that network user(s). For example, a network user may select communication option icon 116a adjacent a user indicator in “From” field 104. Selection of communication icon 116a establishes an audiovisual call with the network user associated with the

5 communication option icon selected. Communication option icons may also be presented in a communication order preferred by the network user as described above.

It is to be understood that communication option icons 116a-116n may be provided for any user indicator provided in the electronic document and need not be provided adjacent a user indicator. For example, a single set of communication option
10 icons may be provided in an electronic document and a user may select one or more network users and the communication option icon representing the communication desired to be established.

Further, the user's status associated with each of the communications may be reflected in the graphical user interface. For example, the icon may have a different color,
15 highlighting, graying or other visual indicator to indicate whether the user is available for communication via that communication option presented. For example, if the user is on a mobile phone, away from his computer (and thus not active), but with his pager activated, the icon for the phone may be grayed out, the icon for electronic mail via the network may be green (to indicate on-line but not available), whereas the pager may be bold to
20 indicate that the user's pager is on.

According to a specific embodiment of the present invention, hypertext mark-up language (HTML) documents are enabled to provide communication links to on-line users using user indicators as shown in Fig. 8. Fig. 8 is an illustration of a HTML document 210 provided with user indicators for network users listed in the message
25 board. HTML document 210 may be provided in a browser interface along with standard browser features such as one or more pull-down menus 212 and toolbar 214. HTML document 210 may comprise body 216, user indicators 218a-218g, and link identifiers 220. In this embodiment, user indicators 218a-218g appearing in HTML document 210 are coded to provide a visual indication of a network user's status and to provide a link to
30 one or more communication options. For example, body 216 may be provided with one or more user indicators 218a-218g. User indicators 218a-218g may be coded according to various criteria and be used as a communications link as described above. As shown in

5 Fig. 8, user indicators 218a-218d are bold and underlined indicating that Robert Carter, Eric Cabot, Jennifer Lamb, and Ann Hudson, respectively, are all on-line. User indicators 218e-218g, however, are not bold and underlined, thus indicating that Laurie Gibson, Kevin Harris, and Julie Patrick, respectively, are not on-line. Other forms of indicating whether one or more users are on-line may also be used.

10 In order to provide user indicators 218a-218d as links in HTML document 210, the following code, for example, may be inserted into HTML document 210:

```
<LINK REL=STYLESHEET HREF="livelinks.css" TYPE="text/css">
<SCRIPT SRC="livelinks.js"></SCRIPT>
```

15 To represent a live link anywhere in the text of HTML document 210, the following code may be inserted:

```
<SCRIPT>writeLiveLink([User's login identification])</SCRIPT>
```

For example, to insert the name Jennifer Lamb at a certain position inside the document text, the following code may be inserted:

```
<SCRIPT>writeLiveLink("Jenifer Lamb")</SCRIPT>
```

20 In addition, a Java applet may be inserted on HTML document 210 that provides the status notifications and the communication establishing. The following code may be added to insert the applet:

```
<SCRIPT>
writeLiveLinksApplet([Applet URL], [Login Name], [Password])
25 <SCRIPT/>
```

User indicators 218a-218d may be used to establish one or more communications with one or more network users. For example, Fig. 9 illustrates a text chat initiated using user indicator 218a. In this example, Ann Hudson has established a text chat with Robert Carter. A text chat (or other communication) may be initiated using any of the methods for establishing one or more communications as described above. After initiating a text chat, a text chat window 222 may be presented to the user.

5 Text chat window 222 may comprise a header 224, pull-down menus 226, text
body 228a, text body 228b, and options 230a-230c. Header 224 may be used to identify
the network user who initiated the text chat. Pull-down menus 226 may be used to present
various operations relating to a text chat (as described above) or standard Windows™
operations. Text body 228a may be used to display the text input by each network user
10 and text body 228b may be used to display text that is being input by that particular user
prior to submitting the text to the text chat. Options 230a-230c may be used to perform
various other operations. For example, option 230a may be used to send text input into
text body 228b into the text chat. Option 230b may be used to establish text chat
communications with other network users and option 230c may be used to close text chat
15 window 222.

 System 10 may be provided on an electronic storage medium comprising code
embodied therein and loaded onto a client. Various objects of the client may also be
provided on an electronic storage medium.

 Other embodiments and uses of the invention will be apparent to those skilled in
20 the art from consideration of the specification and practice of the invention disclosed
herein. The specification and examples should be considered exemplary only. The scope
of the invention is intended to be limited only by the following claims.

CLAIMS**5 What is claimed is:**

1. A system for enabling system users to establish at least one communication with one or more system users using a user indicator within an electronic document, the system comprising:

10 user indicator presentation means for presenting one or more user indicators associated with each of one or more system users within an electronic document;

communication selection means for enabling a user to select at least one communication mode from a plurality of communication modes; and

15 communication means for enabling a user to activate the one or more user indicators to initiate the at least one communication mode selected with the one or more system users associated with the one or more user indicators selected.

2. The system of claim 1, further comprising communication preventing means for enabling a system user to prevent other system users from establishing communications with that system user.

20 3. The system of claim 2, further comprising urgent communication request means for enabling the one or more system users to override the communication preventing means and to send an urgent communication request.

4. The system of claim 1, further comprising preference presentation means for presenting a system user's preference for receiving communications.

25 5. The system of claim 4, further comprising communication options presenting means for presenting the communication options for a system user in an order preferred by the system user.

6. The system of claim 1, further comprising conference communication means for enabling the one or more system users to establish conference communications.

30 7. The system of claim 6, wherein the conference communication means enable the one or more system users to share at least one application.

5 8. A method for enabling system users to establish at least one communication with one or more system users using a user indicator within an electronic document, the method comprising the steps of:

presenting one or more user indicators within an electronic document;

selecting at least one communication mode from a plurality of communication modes;

10 and

providing a communication link to one or more system users using the one or more user indicators.

15 9. The method of claim 8, further comprising the step of establishing at least one communication with the one or more system users upon activation of the user indicator associated with those one or more system users.

10. The method of claim 8, further comprising the step of preventing the one or more system users from establishing a communication with at least one of the one or more system users based on that system user's request for privacy.

20 11. The method of claim 10, further comprising the step of establishing an urgent communication by requesting the system user's request for privacy.

12. The method of claim 11, further comprising the step of presenting one or more communication option preferences for a system user by the user indicator in an order preferred by that system user.

13. The method of claim 8, wherein the communication is a conference communication.

25 14. The method of claim 13, wherein the conference communication involves sharing at least one application among system users.

15. A system for enabling system users to establish at least one communication with one or more system users using a user indicator within an electronic document, the system comprising:

30 a user indicator presentation module that presents one or more user indicators associated with each of one or more system users within an electronic document;

5 a communication selection module that enables a user to select at least one communication mode from a plurality of communication modes; and

a communication module that enables the one or more system users to activate the one or more user indicators to initiate at least one communication with that system user associated with that user indicator selected.

10 16. The system of claim 15, further comprising a communication preventing module that enables a system user to prevent other system users from establishing communications with that system user.

15 17. The system of claim 16, further comprising an urgent communication request module that enables the one or more system users to override the communication preventing module and to send an urgent communication request.

18. The system of claim 17, further comprising a communication options preference presentation module that presents system user's preference for receiving communications.

20 19. The system of claim 18, further comprising a communication options presenting module that presents the communication options for a system user in an order preferred by that system user.

20. The system of claim 19, further comprising a conference communication module that enables the one or more system users to establish conference communications.

21. The system of claim 20, wherein the conference communication module enables the one or more system users to share at least one application.

25 22. A processor readable medium having processor readable code embodied therein for enabling a system user to establish at least one communication using a user indicator within an electronic document, the medium comprising:

user indicator identifying processor readable code that causes a processor to identify the one or more user indicators within an electronic document;

30 communication selection processor readable code that causes a processor to select at least one communication mode from a plurality of communication modes; and

5 communication link providing processor readable code that causes a processor to provide at least one communication link to one or more communication options using the one or more user indicators.

23. The medium of claim 22, further comprising communication establishing processor readable code that causes a processor to establish at least one communication with one or
10 more system users associated with a selected user indicator when that user indicator is selected.

24. The medium of claim 22, further comprising processor readable code that causes a processor to prevent other system users from establishing a communication with that system user.

15 25. The medium of claim 24, further comprising urgent communication requesting processor readable code that causes a processor to enable the one or more system users to send an urgent communication request.

26. The medium of claim 22, further comprising communication preference identifying processor readable code that causes a processor to enable the one or more system users to
20 identify a preference for receiving the at least one communication.

27. The medium of claim 26, further comprising communication preference ordering processor readable code that causes a processor to present the at least one communication in an order preferred by that system user.

28. The medium of claim 22, further comprising conference communication establishing
25 processor readable code that causes a processor to enable the one or more system users to establish conference communications.

29. The medium of claim 28, wherein the conference communication establishing code causes a processor to enables the one or more system users to share at least one application.

5 **Abstract of the Disclosure**

 A system, method, and processor readable medium containing code embodied therein are provided that enable system users to view one or more system user's status and to establish communications with the one or more system users using a user indicator in an electronic document (*e.g.*, electronic mail message, hypertext markup language document). The user indicator may be a system user's login identification presented as a hypertext link to one or more communication options. The system may include an identification module for identifying the one or more system users. The identification module may identify a system user's login identification (*e.g.*, the system user's name, employee number) and provide the system user's status using the user indicator. A status module, responsive to the identification module, provides the status of the system users. The status module may provide a visual indication of a system user's status using, for example, color coding, formatting, symbols, etc. A communication module for establishing a communication link with the one or more system users using the user indicator may also be provided. The communication module may be used to establish a variety of communications with one or more of the system users. For example, a user may chat, telephone, transmit an electronic mail message, share one or more application programs, whiteboard presentations, facsimile, or page to one or more of the system users by selecting the user indicator using a conventional computer mouse or keyboard.

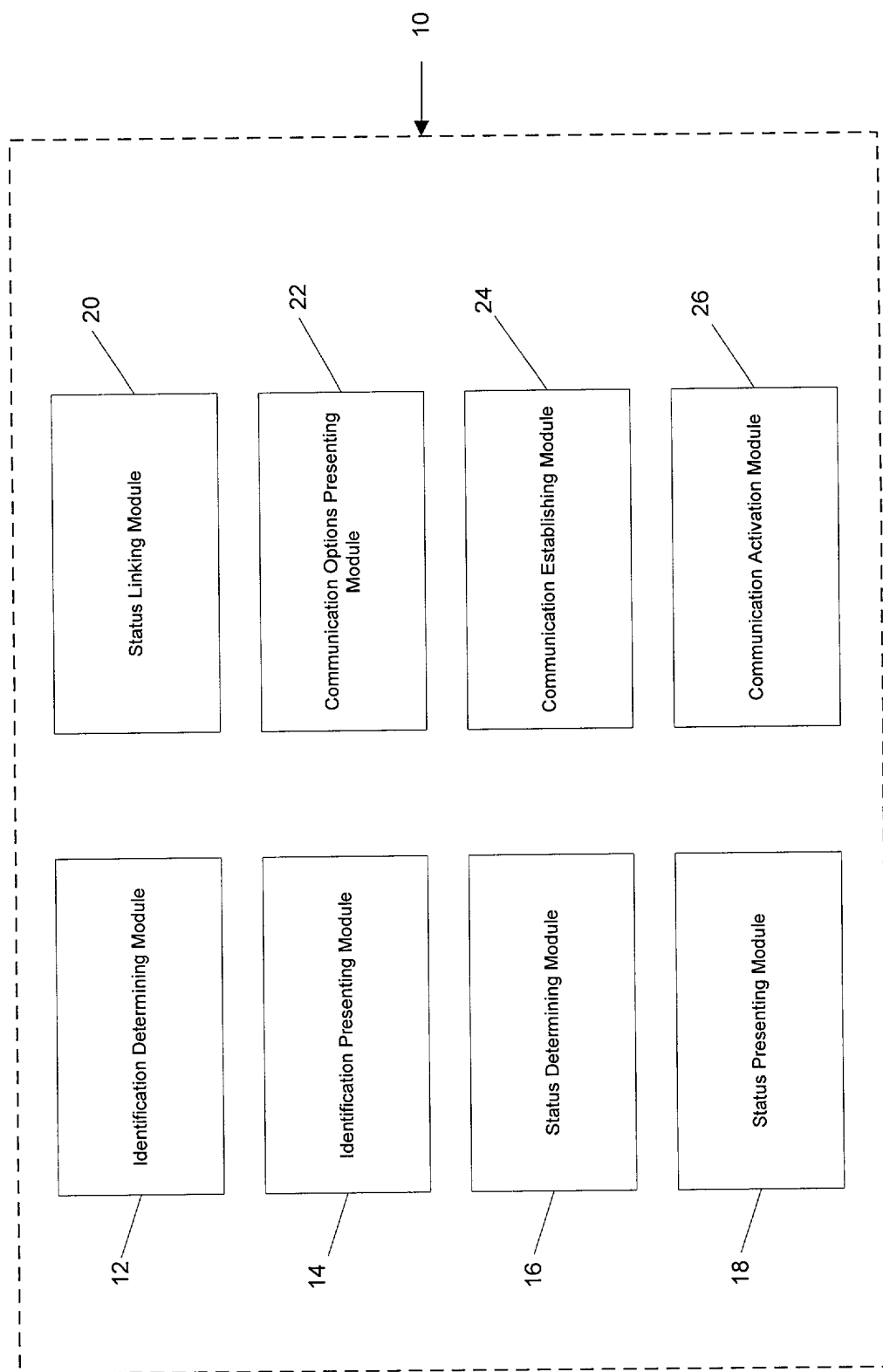


Figure 1

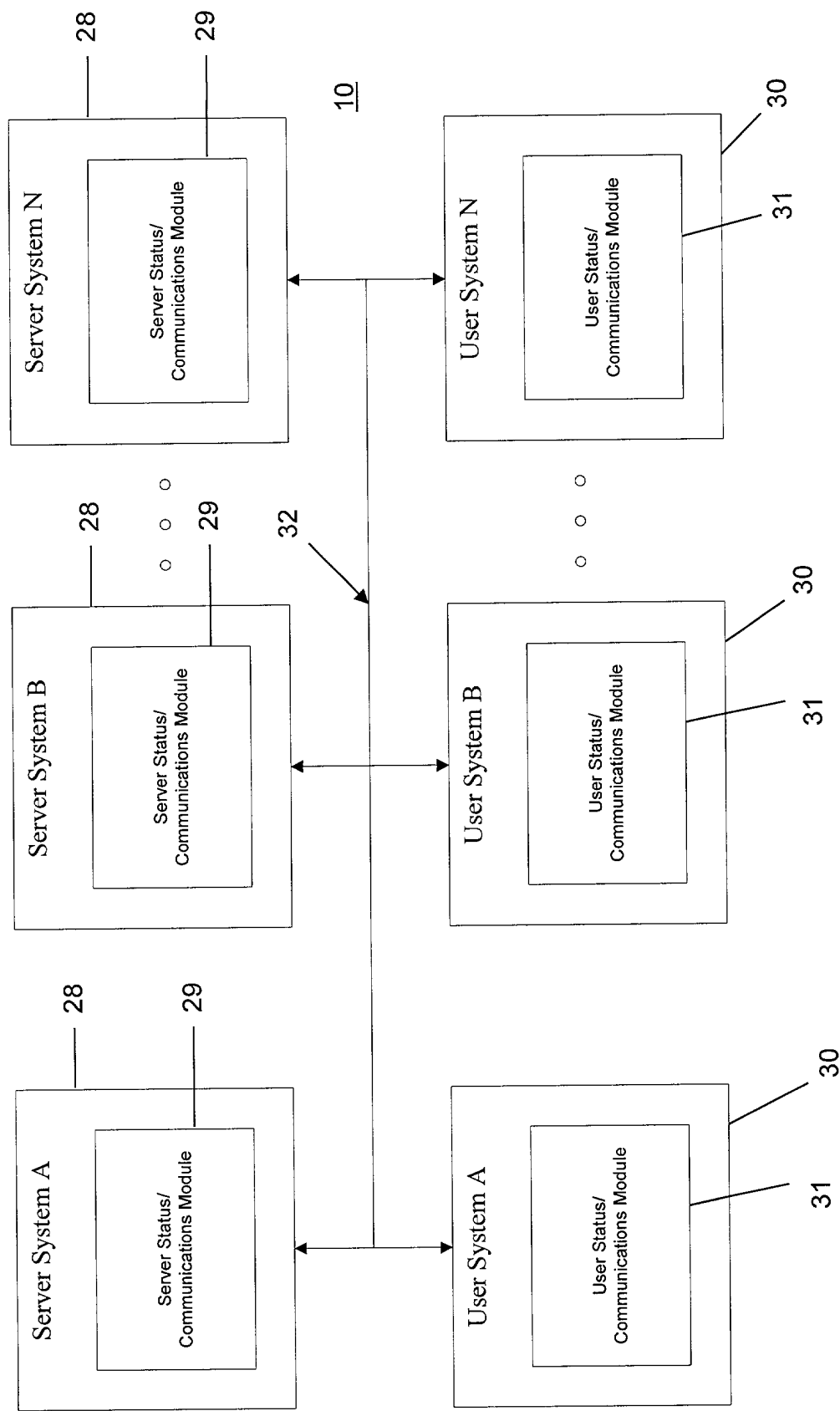


Figure 1A

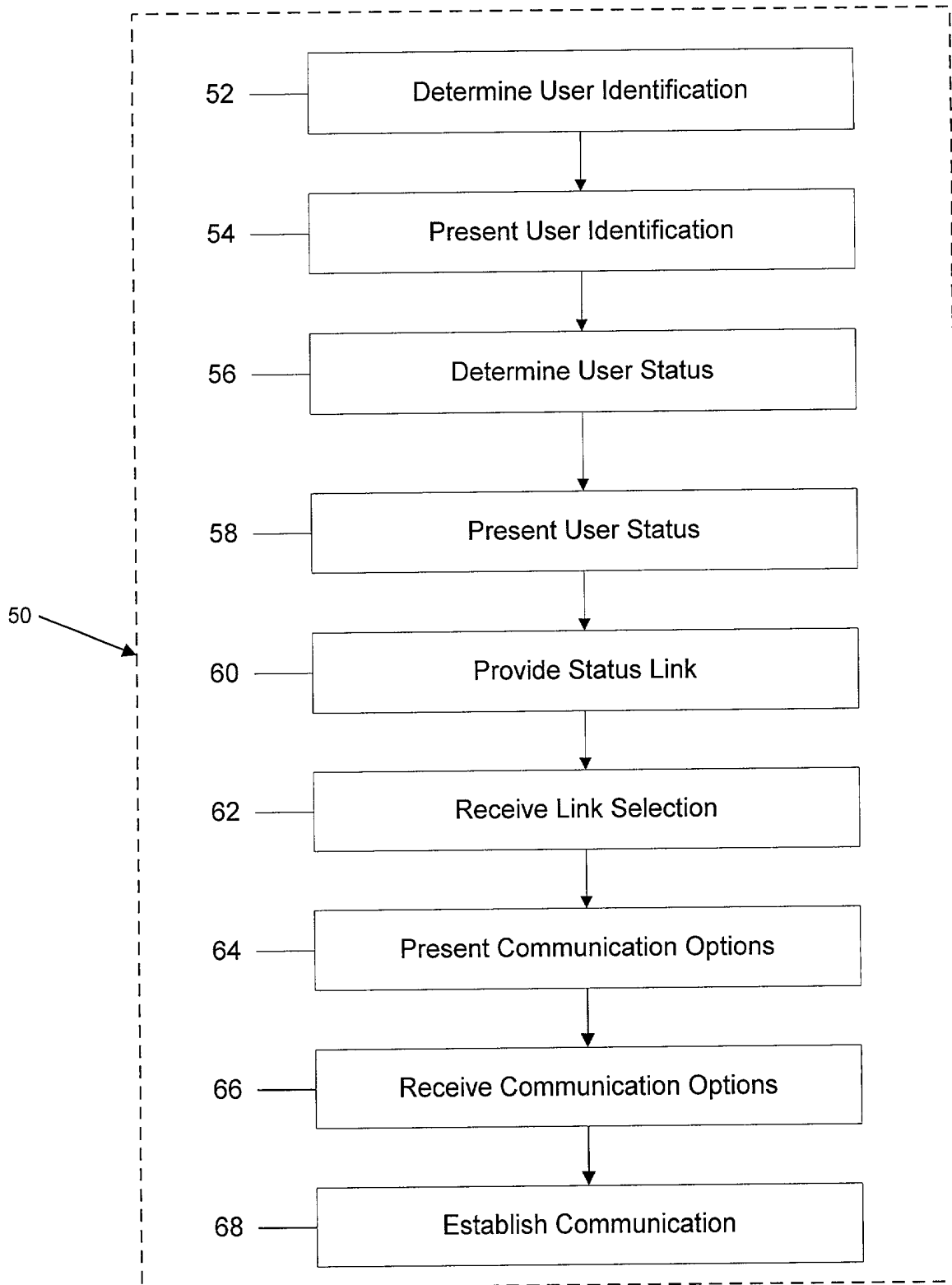
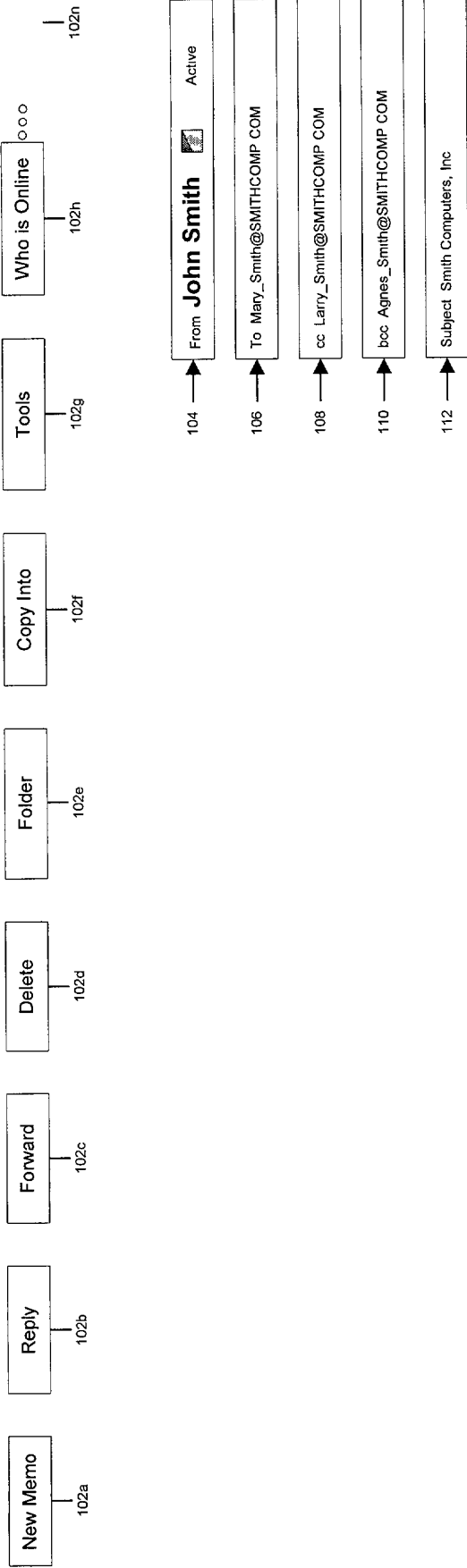


Figure 2



Hi,

We need to hold a shareholders meeting ASAP!

-John

Figure 3

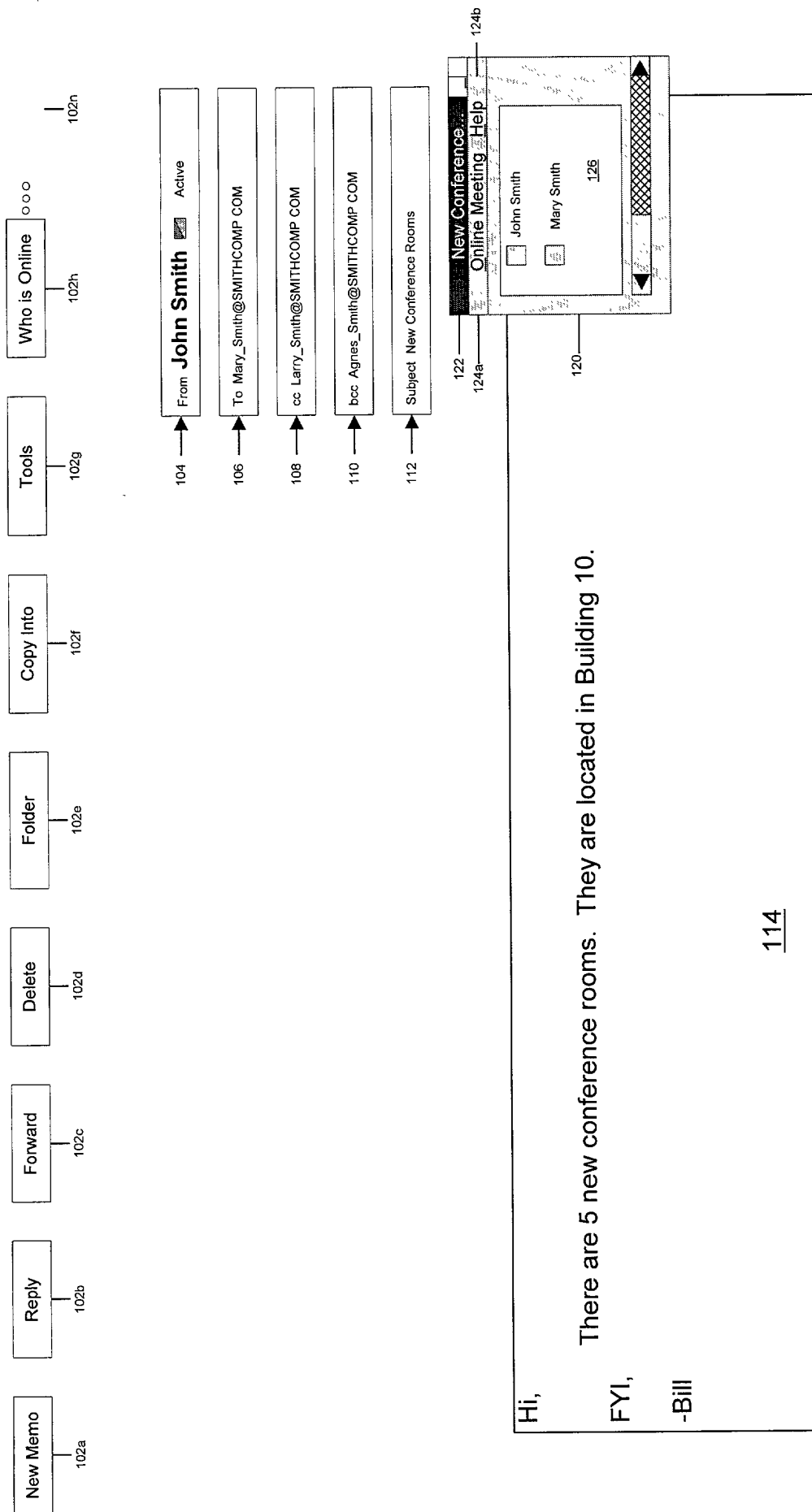
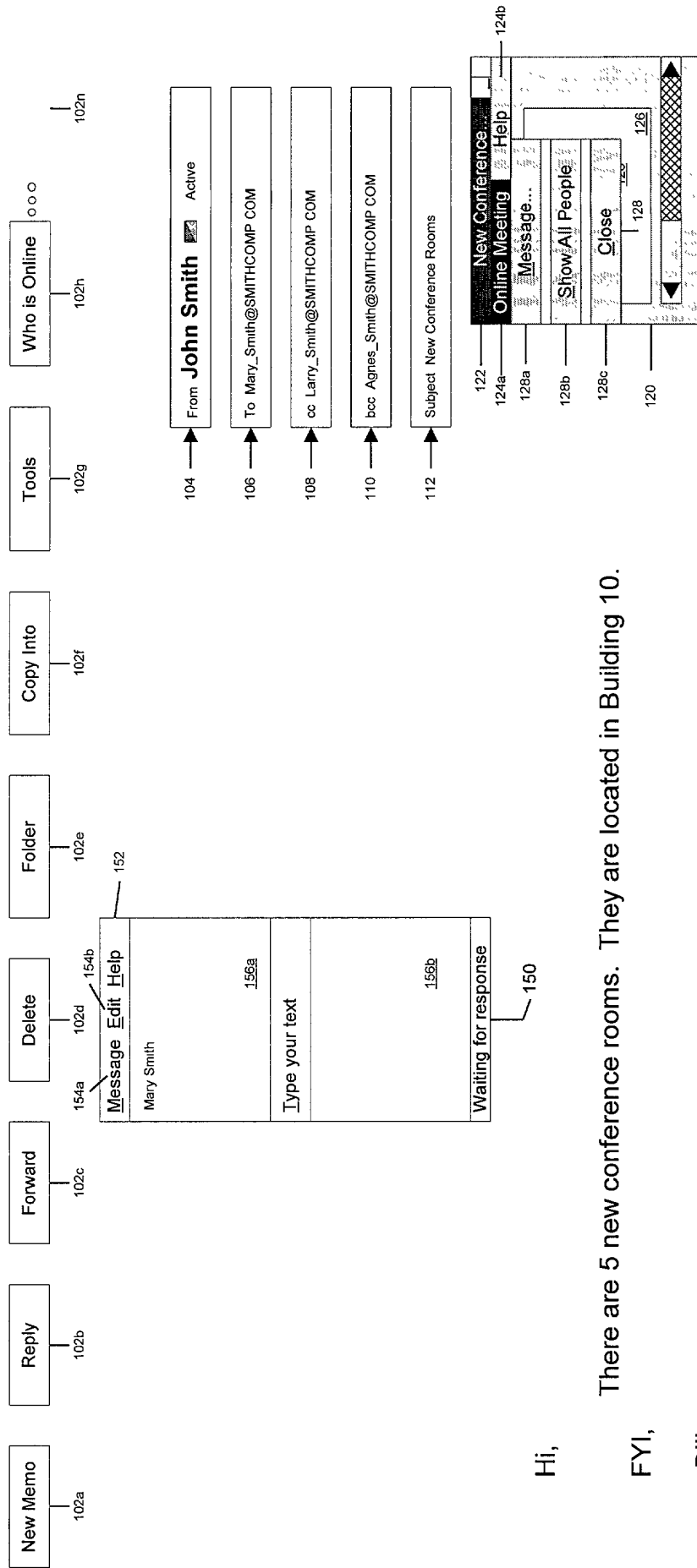


Figure 4



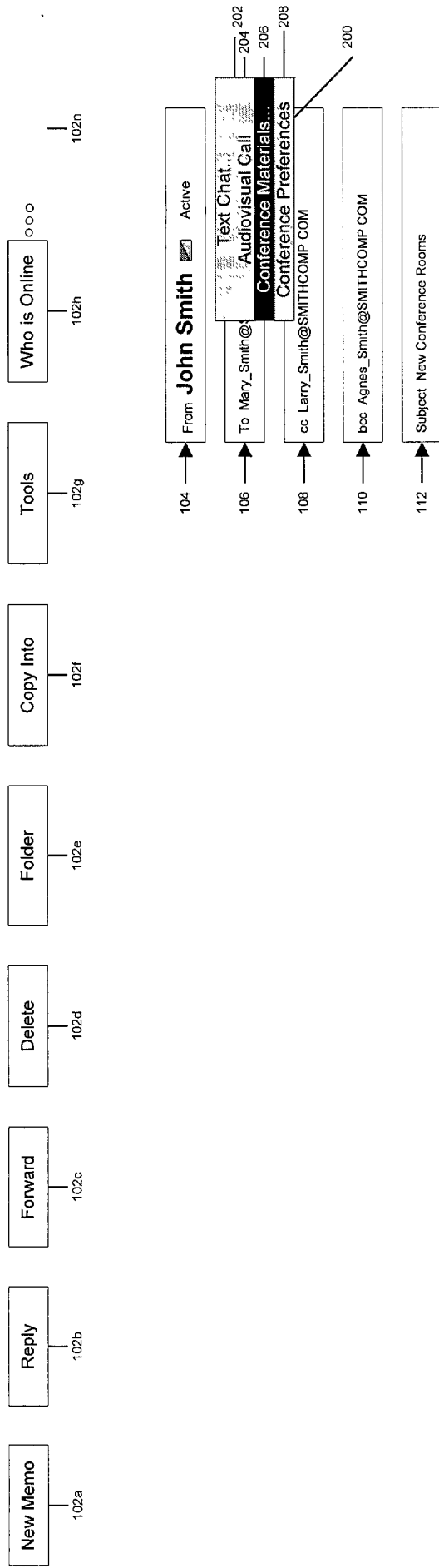
There are 5 new conference rooms. They are located in Building 10.

Hi,

FYI,

-Bill

Figure 5



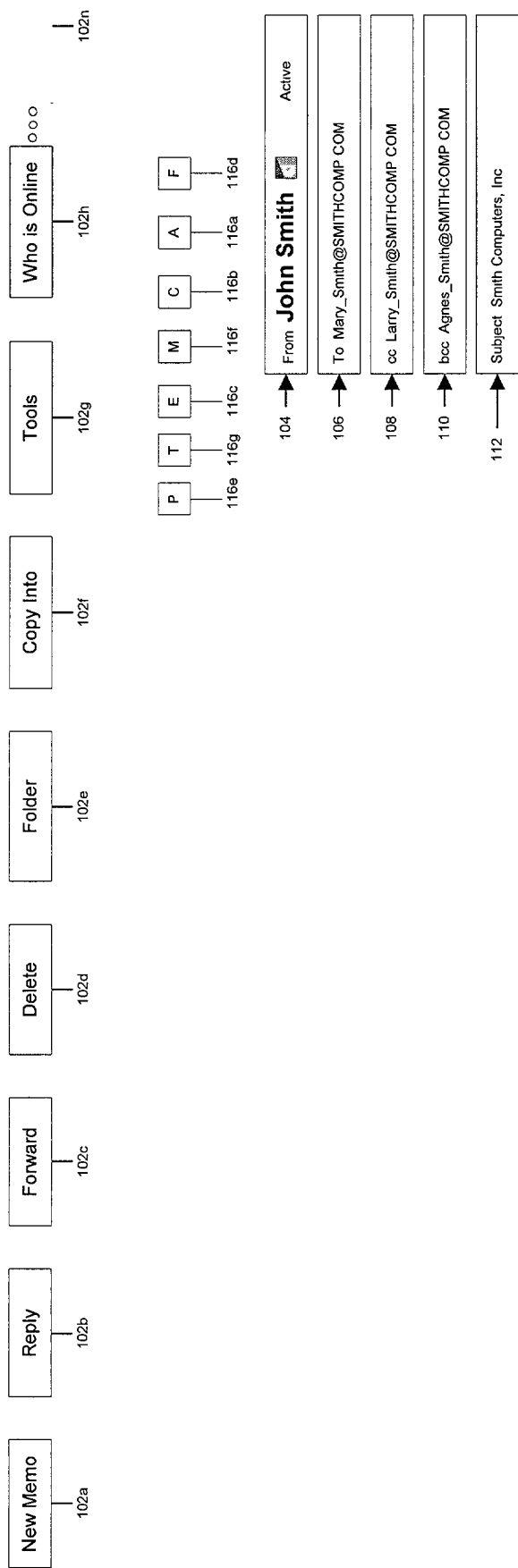
Hi,

There are 5 new conference rooms. They are located in Building 10.

FYI,

-Bill

Figure 6



Hi,

We need to hold a shareholders meeting ASAP!

-John

Figure 7

Pull Down Menus 212

Tool Bar 214

Address <http://champion/livelinksnew/livlinks.html> Links

Team Messages		
Prototype is ready It's in the lab!	Ann HUDSON/NBA [started: 20:41:07] 224	Robert Carter ---218a 15/03/99
Thanks Ann! Your outline said Eric Cabot and I	Pull-down Menu 226 Robert Carter/N.. I have another question.. Ann Hudson/N.. Sure, go ahead. 228a	Laurie Gibson ---218e 15/03/99 next couple of hours. You can come find me in the lab if you want to talk.
Outline for tomorrow Here's the basic morning by 7:30 Ann	Type your text 228b Send 230a Invite Others 230b Close 230c 222	Ann Hudson ---218d 14/03/99 what we've said. This needs a little more work, obviously. I'll be in tomorrow ered. Thanks!
List of design issues For your information, here's a list from our meeting of issues that I will be raising with the designers.		Kevin Harris ---218f 12/03/99
Welcome to our place on the Web! To our clients - please feel free to use this folder for any team communications. A member of the consultancy team will monitor this folder at least twice daily, and respond to any issues here within 24 hours.		Julie Patrick---218g 02/02/99
Send message to Robert Carter 220		

Figure 9

JOINT DECLARATION FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residences, post office addresses and citizenship are as stated below next to our names;

We believe that we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled **COMMUNICATION LINK SYSTEM BASED ON USER INDICATOR**, the specification of which

☒ is attached hereto.

☐ was filed on _____ as Application Serial Number _____ and was amended on _____ (if applicable)

We hereby state that we have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to in this declaration.

We acknowledge the duty to disclose all information known to us to be material to the patentability of this application, as defined in 37 C.F.R. § 1.56.

We acknowledge the duty to disclose to the Office all information known to us to be material to patentability as defined in § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Prior Foreign Application(s)

We hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Country	Application Number	Date of Filing (day, month, year)	Date of Issue (day, month, year)	Priority Claimed Under 35 U.S.C. 119
				Yes <input type="checkbox"/> No <input type="checkbox"/>
				Yes <input type="checkbox"/> No <input type="checkbox"/>

Prior United States Provisional Application(s)

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below

Application Serial Number	Date of Filing (day, month, year)
60/137,513	2, June, 1999

Prior United States Application(s)

We hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Serial Number	Date of Filing (day, month, year)	Status - Patented, Pending, Abandoned

And we hereby appoint, both jointly and severally, as our attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith the following attorneys, their registration numbers being listed after their names:

Thomas J. Scott, Jr., Registration No. 27,836; Stanislaus Aksman, Registration No. 28,562; James G. Gatto, Registration No. 32,694; Christopher C. Campbell, Registration No. 37,291; Henry C. Su, Registration No. 37,738; Brian M. Buroker, Registration No. 39,125; Charles F. Hollis, Registration No. 40,650; Jonathan D. Link, Registration No. 41,548; Kevin J. Dunleavy, Registration No. 32,024; Kevin T. Duncan, Registration No. 41,495; Charles B. Lobsenz, Registration No. 37,857; George Georgellis, Registration No. 43,632; Stephen T. Schreiner, Registration No. 43,097; Christopher J. Cuneo, Registration No. 42,450; Raphael A. Valencia, Registration No. 43,216; Scott D. Balderston, Registration No. 35,436; Steven P. Klocinski, Registration No. 39,251; Yisun Song, Registration No. 44,487; Matthew J. Pryor, Registration No. 45,278; Jennifer A. Albert, Registration No. 32,012; Kerry Owens, Registration No. 37,412; Milan M. Vinnola, Registration Number 45,979; Devin S. Morgan, Registration No. 45,562; Andrew J. Ririe, Registration No. P45,979; Carl Benson, Registration No. 38,378.

All correspondence and telephone communications should be addressed to Hunton & Williams, 1900 K Street, N.W., Suite 1200, Washington, D.C. 20006-1109, telephone number (202) 955-1500, which is also the address and telephone number of each of the above listed attorneys.

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature _____

Date _____

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